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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/745,430	12/26/2000	Kenichi Kusaka	PM 276469 SPO-2432	1555
909	7590	06/02/2004	EXAMINER	
PILLSBURY WINTHROP, LLP P.O. BOX 10500 MCLEAN, VA 22102			NGUYEN, THONG Q	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,430

Applicant(s)

KUSAKA, KENICHI

Examiner

Thong Q Nguyen

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 May 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3, 4, 6, 7, 9, 12-24 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) 3, 4, 9 and 12-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 6-7 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on May 10, 2004 has been entered.

Response to Amendment

2. The present Office action is made in response to the amendment filed on 5/10/2004. It is noted that in the mentioned amendment, applicant has made amendments to claims 1 and 26.

It is also noted that applicant has stated that claims 6 and 7 are amended; however, there is not any indication in the claims to show that the claims are amended. Further, a comparison of the claims as shown in the amendment filed on 5/10/2004 and the claims as stated in the amendment filed on 8/21/2003 has resulted that both set of the claims are the same; therefore, present claims 6 and 7 as shown in the amendment of 5/10/2004 are considered as the claims which are previously presented. In case that applicant intends to amend those claims, applicant should clearly show the change(s) to the claim(s) in response to this Office action.

Election/Restrictions

3. The pending claims 1, 3-4, 6-7, 9, 12-24 and 26-28 were subjected to a restriction requirement on the basis of species as stated in the Office action mailed to applicant on 4/22/2002. The claims 1, 6-7 and 26-28 which directs to the elected species are examined.

Since applicant has received an action on the merits for the originally presented invention, and the application is refiled under the Rule 37 CFR 1.114; therefore, the invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 3-4, 9 and 12-24 have been withdrawn from consideration as being directed to a non-elected invention/species.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 6 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otaki (Japanese reference No. 11-218679, of record).

Otaki discloses a differential interference microscope. In the embodiment shown in figure 4, the microscope comprises the following elements: 1) a light source (1), a polarizer (P) for converting a ray of light emitted from the light source into linearly polarized light, a Wollaston prism (B2) for separating the linearly polarized light into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separate angle wherein the prism possesses a position of localized fringes; a lens system having a lens element (6) for guiding polarized light to a sample (4) and a lens

Art Unit: 2872

element (3) for guiding light from the sample to a second Wollaston prism (B1) which combines the two polarized components on an identical path after passing through the lens (3); an analyzer (A) for converging light into linearly polarized light and for providing an image (5) of the sample to be viewed by an observer via an eyepiece lens element. It is noted that all of the mentioned optical elements are arranged in that order along the light path from the light source (1) to the image (5). Otaki also discloses that the polarization member (B1) is rotated/tilted about a rotational axis for the purpose of adjusting the image quality as well as for correction the image aberrations/shears due to the different in focal lengths of the objective lenses used in the system. While Otaki does not explicitly state that position of the prism is maintained during a rotation/tilt of the prism (B1) in accordance to the use of different objective lenses; however, it would have been obvious to one skilled in the art to maintain the position of the prism during a rotation/tilt the prism (B1) with respect to the optical axis of the microscope to correct the image aberrations/shears to obtain the best quality of the image for a particular objective lens being used/inserted into the optical path of the microscope.

6. Claims 1, 6 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Otaki (both of record).

Hayashi discloses a differential interference microscope. In the embodiment described in columns 3-5 and shown in figure 4, the microscope comprises the following elements: 1) a light source (1), a polarizer (2) for converting a ray of light emitted from the light source into linearly polarized light, a Wollaston prism (9) for separating the linearly polarized light into two linearly polarized components which vibrate

Art Unit: 2872

perpendicular to each other and travel at a slight separate angle wherein the prism possesses a position of localized fringes; a lens system having a lens element (4) for guiding polarized light to a sample (M) and a lens element (5) for guiding light from the sample to a second Wollaston prism (10) which combines the two polarized components on an identical path after passing through the lens (5); an analyzer (7) for converging light into linearly polarized light and an eyepiece lens element (8) for observing the image of the sample (M). It is noted that all of the mentioned optical elements are arranged in that order along the light path from the light source (1) to the eyepiece lens (8). The only feature missing from that embodiment is that Hayashi does not disclose that at least one Wollaston prism is able to rotate with respect to the optical axis of the microscope for the purpose of varying the distance from the prism to the position of localized fringes. However, Hayashi indeed teaches such a rotation of the prism with respect to the optical axis as can be seen in columns 2 and 6 and shown in figure 6. It is noted that the rotation of the prism as stated by Hayashi will change the localized distance of the differential image. See column 2, lines 26+, for example. Further, the rotation of at least one prism in a microscope system is also suggested to one skilled in the art as can be seen in the system provided by Otaki. See pages 5-6 and fig. 6. Otaki also discloses that the polarization member (B1) is rotated/tilted about a rotational axis for the purpose of adjusting the image quality as well as for correction the image aberrations/shears due to the different in focal lengths of the objective lenses used in the system. While Otaki does not explicitly state that position of the prism is maintained during a rotation/tilt of the prism (B1) in accordance to the use of different

Art Unit: 2872

objective lenses; however, it would have been obvious to one skilled in the art to maintain the position of the prism during a rotation/tilt the prism (B1) with respect to the optical axis of the microscope to correct the image aberrations/shears to obtain the best quality of the image for a particular objective lens being used/inserted into the optical path of the microscope. Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope having a transmitted illumination provided by Hayashi by rotating/tilting at least one prism as suggested by Otaki while maintaining the position of the prism for the purpose of varying the distance between the rating prism and its localized fringed position for the purpose of improving the image quality.

7. Claims 7 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hayashi in view of Otaki (both of record).

Hayashi discloses a differential interference microscope. In the embodiment described in columns 3-5 and shown in figure 4, the microscope comprises the following elements: 1) a light source (1), a polarizer (2) for converting a ray of light emitted from the light source into linearly polarized light, a Wollaston prism (9) for separating the linearly polarized light into two linearly polarized components which vibrate perpendicular to each other and travel at a slight separate angle wherein the prism possesses a position of localized fringes; a lens system having a lens element (4) for guiding polarized light to a sample (M) and a lens element (5) for guiding light from the sample to a second Wollaston prism (10) which combines the two polarized components on an identical path after passing through the lens (5); an analyzer (7) for

converging light into linearly polarized light and an eyepiece lens element (8) for observing the image of the sample (M). It is noted that all of the mentioned optical elements are arranged in that order along the light path from the light source (1) to the eyepiece lens (8). There are only two things missing from that embodiment is that Hayashi does not disclose that at least one Wollaston prism is able to rotate with respect to the optical axis of the microscope for the purpose of varying the distance from the prism to the position of localized fringes, and the product between the thickness of the prism and the angle of rotation of the prism is smaller than a particular value.

Regard to the rotation of the prism, it is noted that Hayashi indeed teach such a rotation of the prism with respect to the optical axis as can be seen in columns 2 and 6 and shown in figure 6. The rotation of the prism as stated by Hayashi will change the localized distance of the differential image. See column 2, lines 26+, for example. Further, the rotation of at least one prism in a microscope system is also suggested to one skilled in the art as can be seen in the system provided by Otaki. See pages 5-6 and fig. 6. Otaki also discloses that the polarization member (B1) is rotated/tilted about a rotational axis for the purpose of adjusting the image quality as well as for correction the image aberrations/shears due to the different in focal lengths of the objective lenses used in the system.

While Hayashi and Otaki do not clearly state that the product between the thickness of the prism and the rotating angle is smaller than 12 mm; however, such a feature is inherently disclosed by the structure of the system claimed. The support for

Art Unit: 2872

that conclusion is as follow: First, it is well known that the thickness of the prism is about 1 mm or at most 2 mm (see also the present specification at pages 2-3); and second, the rotation of a prism about the optical axis of a system is relatively small; therefore, it is inherently that the product of the thickness of the prism, i.e., 1-2 mm, and the rotating angle of the prism, i.e., in the range of 10 degrees, is in the range claimed.

Thus, it would have been obvious to one skilled in the art at the time the invention was made to modify the microscope having a transmitted illumination provided by Hayashi by rotating at least one prism as suggested by himself and Otaki for the purpose of varying the distance between the rating prism and its localized fringed position for the purpose of improving the image quality.

Response to Arguments

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant's arguments filed on 5/10/04 have been fully considered but they are not persuasive.

Applicant argued that Otaki fails to disclose the polarizing member changes its tilt attitude while its position along the optical axis remains unchanged. However applicant's arguments have been fully considered but they are not persuasive.

Applicant is respectfully invited to review the art of Otaki in that he has not positively disclosed that the tilted prism (B1) is changed in position during the tilting of the prism. A translation of the Otaki's reference is attached with this Office action. If the applicant is of opinion that the prism (B1) of Otaki changes its

Art Unit: 2872

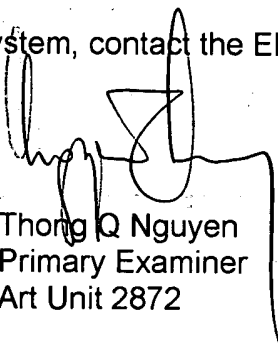
position during the tilting process, then applicant is respectfully invited to show that detail, i.e., the movement in position of the prism (B1), in the Otaki reference in response to this Office action.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q Nguyen whose telephone number is (571) 272-2316. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew A Dunn can be reached on (571) 272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Thong Q Nguyen
Primary Examiner
Art Unit 2872
